[illegible] 1953-1954

Box 29 folder 21

Content # 25

Miscellaneous I

Almost all this material is in MacNeish's handwriting. Charts appear to be early drafts; many are unlabelled.

1. Chart (oversize) of pottery, perishable artifacts, + unidentified remains, with a page of notes or occupation (2 pp.)
2. Chart of var. remains, unidentified site (1 p.)
3. Unidentified chart (1 p.)
4. Charts of plant remains (2) (1 p.)
5. Notes on categories (1 p.)
6. Note, "Insert p. 4" (1 p.)
7. Notes on Occupation 8, Zone A (1 p.)
8. Notes on Sediments + cultural sequence (1 p.)
9. Notes on var. occupations/zones (10 pp.)
10. Chart of var. remains (1 p.)
11. Chart of diff. types of remains (1 p.)
12. Oversize chart of var. remains
13. Chart of perishable remains, .. scrapers – inc.
14. Occupation 1, Zone O notes, w. Chart – (1 p)
15. Rough outline (2 pp.)
16. Categories for identifying diet (1 p)
17. Part of letter to MacNeish fr. Missouri Botanical Garden (fr. Cutler?) Sept. 21, 1955, incomplete
18. Notes on mats (Kelley's?) - 1 p.
19. Typed page, "Chemical Composition of World's Principal Legumes..."
20. Chart of squares, occupations (w. notes)
21. Notes on lithic types (1 p.)
22. Graph, wild + domesticated plants, cultural phases (1 p.)
23. "Mended gourd?" (1 p.)
24. Chart of types of lithics + notes on cultural phases of lithics (2 pp)
25. Chart "Cut bone, not clearly artifacts // Snail-shell beads" (5 pp)
26. Graph, agriculture, population concentration, material advance
27. Notes on fibers (4 pp)
28. Chart, Occupation 5
29. Notes on poisons, narcotics (8 pp.)
30. Chart, unreadable

JGL

— Insert plate

~~[illegible]~~ I - directly over yellow [illegible] - Zone I area 8 -

~~veg.~~ relatively thick — pollen = wet

~~3 [illegible]~~

exposing to west at least 200 cubic feet

3 hearths & burial pit

mano - bowl — ~~season~~ (corn harvest - spring)

Dwellings — ~~season~~ chickens

plants (flower, corn [illegible]

(1 word) - less than 10

bones - 17 - Cut & heat jointly, dried blood
altered [illegible] - flakes & burned scrapers

360 - 50 to 80

food gathering - pinecones, [illegible], amaranth
opuntia - choppers
- baskets
nets

agri — perhaps 20 to 30 percent

250 corn
[illegible]
cotton
beans
[illegible] - containers
[illegible]

- skin scraping = bifacial & scrapers.

weaving - ~~sewing~~

blanket - [illegible]

[illegible]

[illegible]

single [illegible]

split [illegible]

[illegible]

[illegible]

[illegible] sleeping mats

		2				19				
1		1				33				2
	1	1	1			27				1
		13				18			5	
4	6	7	1	3	21	26	19	2	11	6
1		17		3		28			3	2
13	6	17		2		29		4	6	10
		3				25			4	
		1	3			30			4	
						27				2
1						20				1
		1				35			3	
						37			3	
16	5				31	36	36	9	8	19
	1	1	1		3	34			3	
7	4	2	1	1	15	38	14	1	6	7
3	4	3	2	1	13	42	4	2	1	1
1		2	1		4	40			5	4
35	36	46	11	11	139	41	99	16	42	41
2			2	2	6	43				
17	16	5	1	11	50	44	23	2	8	13
2		2	2	1	7	51	2		1	1
4	2	2	4	3	15	52		2		3
5	3	6		4		53			4	6
						34				1
12	1	1-1	2	1	30	31	16	1	6	9
2	2	2				62		5		7
	1					63		2		1
						75A				
1	1	1				93			1	1
1	1	3				170				
1	1					161				1
						160			1	
1						79		2	1	1
						86				
	3					87				
						88			2	
1		1				68			3	
3	1					67				
		1				70				
		2				71			4	
12	12	8		1	33	77	18	3	2	13
	1					72				
	1	9				76			7	
	1	3		1	5	73				
4		3				89				4
1		1				✓153 ✓152			1	4
1	1					✓1396			1	1
		2				✓151		1		
3						✓150				2
	2					✓148				
	1					✓147				1
	3	1				✓146				
						✓145				2
1			2			✓144				
1	4					✓142		2		2
1						✓141		1		2
	1					✓140				1
		1				✓139			1	3
	4	1	4	2		113		4	2	5
						43			1	
2	3	3		3	11	96			1	
3	6		8	1	18	109		1	1	4
				1		111		1		
2						112				
	3	1	1			✓130		1		7
3	1					✓189A				2
3	4			1		✓137		1	1	1
	1					✓136				
10	2				12	✓135				1
						✓134	10	4	1	5
						✓134	3	3		

127 [illegible]
123 clay effigy
121 clay pipe stem
190 effigy clay pipe
191 elbow pipe
192 clay plug
193 Hailey notched
194 Jamaica arch-notched
195 Fresno
196 Stone
197 [illegible]
198 [illegible] ?
199 Plowman ?
200 triangular, end ? [illegible]
201 [illegible]
202 hammer chopper
203 San Lorenzo Smooth
204 " " Engraved
205 " " malcogale
206 " " Brushed
207 " " Block
208 Occompo Corrugated
209 notched tube
210 small black leaf [illegible]
211 ~~[illegible]~~ tube & [illegible]
212 [illegible]
213 pine leaf sticks
~~[illegible]~~ 214 conical bow tip
215 — 4 [illegible] clips
216 - square knot of grass
217 - slip knot of grass
218 - ~~[illegible]~~ grass ring on end
219 yucca rings
220 grass brush
221 pot rest of grass
222 2 half [illegible]
223 1/1 palm leaf
224 checkerboard mat
225 deer skin sole
226 scallop edge deer-hide
227 straps for [illegible]
228 bone needle
229 shell rest
229a shell spoon
229b - Torn net
229c - Twined cloth
230 - clay pestle
231 San Antonio [illegible] N.
232 Simple bent
233 [illegible] side
234 side-notch [illegible]
235 small bifacial
236 winged [illegible]
237 San Antonio Red
238 San Antonio Polished
239 scraper handle
240 [illegible] pointed [illegible]
241 [illegible] shell
242 Flute or cane
243 square of square knots
245 [illegible] of " "
246 yucca around corn cob
247 [illegible]
248 [illegible] palm leaf
249 part of [illegible]
250 [illegible] of [illegible]
251 tube with [illegible] on end
252 double cloth
253 double [illegible]
154
155
157
156
160
158
164

13,	14,	2	2	1		WS
					100	
		1			67a	1
1					22	
		2	1	1	11	
3		1			10	
		2			1	
		3			8	
		5			12	
		3			13	
		2			14	
1		1			33	
	1	1	1		24	
		13			18	
4	6	7	1	2		
1						
1:						

Infiernillo Diamond	1	4	
Pebble smoother	2	1	
Loop lower basket	3	3	
1/1 small with right angle edge	4	2	
digging stick	5	1	
Almagre skimmed	8	4	
tapered stick	6	7	
Fuegian bag	9	3	
Flake chopper	7	1.	
wooden fire tongs	10	1	
possible cane mainshaft	11	2	
large disk chopper	12	2	1
Pebble chopper	13	6	3
Flat chunk chopper	14	4	1
hard fiber - Z-twist yarn	15	1	3
" " , 2 cord	16	1	5
" " 2 cord, rope	17	5	3
Trimmed scraping plane	18	15	8
Scraper - graver	19	3	2
Possible atlatl shaft		1	1
hard fiber S twist yarn - 2 cord	21	5	11
	22	2	2
	23	1	0
	24	2	2
	25	3	3
	26	3	17
	27	1	3
	28	7	8
	29	3	9
	30	3	2
	31	2	1
	32	0	1
	33	2	1
	34	4	
	35	1	1
	36	2	1
	37	2	
	38	6	4
	39	5	2
	40	6	3
	41	41	23
	42	2	3
	43	1	11
	44	3	15
	45		1/3
	46		1
	47		1
	48		1
	49		1
	50		2
	51		8
	52		2
	53		8
	54		1
	55		2
	56		1
	57		1
	58		2
	59		1
	60		1
	61		1
	62		1
	63		1
	64		1
	65		4
	66		2

355 69
~~352~~ ~~64~~
artifacts

Entire - Ocampo - total - 350 in 69 traits

Infier trait 50 12

Ocampo traits 51 25

In common 274 – 31

✓ 254 - human hair cord

255 - braid 5 - 4 cord 1
256 yucca braid 2
257 napkin ring of fiber and cord 1

		6	23	21	32	4	14	14
	1	35		65			3	6
				106				
				182				
				66				1
1				10				2
				17				1
11	11	11	33	184	49	10	18	21
				104		2		
		1		187				

	cucurbita seed	cucurbita meat	bean pod	bean seed	bean leaf	sunflower seed	corn cob young	corn kernels bocanti	phaseolus coccineus	legume pod	legume seed	panicum seed	agave fiber	bird	small mammal
✓ 1	1	1					1		1					1	1
✓ 2	5					1									1
3										3	1				
✓ 4	1							1							
✓ 5			2	1			1	2							
6							3								
✓ 7							2	5				1			
✓ 8			1		2										
✓ 9	5	1											x		

·ES-1711

frags	8	5	7	1	6	9	2	4	3	1	2	3	4
bean seed	1									1	X		
" leaf	1												
" pod	1	2											
corn kernel		2	5										
corn cob		1	2	1	3					1			4
squash meat				1		1							
squash seed				1		5	5	1		1			
sunflower							1						
tecomate capsicum								1					1
legume pod									3				
legume seed									1				
panicum seed			1										
phaseolus coccineus				1		1				4	X	X	1
bird				1	1								
mammal				1			1						

500,000 ✓
100,000

Zones - ~~[illegible]~~
soil content
~~extent~~

Occupation No. — date
— climate
— extent
cubic feet
features
~~[illegible]~~

Size of group
Duration ~~of occupancy~~
(a) ~~[illegible]~~ thickness of strata
b vegetation

Cultural content
— subsistence tools
— clothing & [illegible]
— cooking
— mats
— containers - pots & baskets
— art & ornaments.
— [illegible]

Culture connection with [illegible] [illegible]
" " [illegible] [illegible] [illegible]

1 - A
2 - B
3 - C
4 - D
5 - [illegible]
6 - [illegible]
7 - K
8 - L
9 - M
10 - N
11 - O
~~12~~ - P

3650
1956
1694 B.C

3440
1956
1486 B.C

INSERT p. 4. In accordance with MacNeish's practice, all artifacts of doubtful provenience (for example, those that fell from a profile during cleaning) are classed as 'Surface', which introduces no additional factor of error, since in these much-pitted caves finds of all periods are represented on the surface.

Occupation 8 — Level 1 — Zone A

Number of Trees

Distribution San Antonio Trees — 247

IV - Zone D. - ash under 3 A
(V) - Zone E - vegetable w/ level 3
VI - Zone F - gray ash - level 4
VII - Zone G - vegetable - level 5
VIII - Zone H - yellowish - level 6
IX - Zone I - lower veg - level 7
X - Zone J - gravel - level 8

Cultural Sequence

(A) Infiernillo
I Occupation 1 - level 8 - zone J.
(A) Infiernillo diagnostic in common with 247
(B) New Infiernillo "
(C) General trait that carry through

II Occupation 2 - level 7 - Zone I
(A) Infiernillo diagnostic in common with occ 1 & 247
(B) New Infiernillo traits
(C) general traits or new general traits

III Occupation 3 - level 6 - Zone H

(B) Occampo.
I — occupation 4 - level 5 - Zone G
(A) Old come traits
(B) ~~New~~ Occampo traits
(C) New Occampo traits
(D) general trait
(E) new general traits
II
III

(C) Flacco.

(D) San Lorenzo

(E) San Antonio

25
30
750
16
4500
750
120.00

Occupation 1 — (level 8) - Zone J - gravel
Number of Artifacts — 12
Distinctive traits in common with Occ. 1 of 247
1. — Infiernillo Diamond point
many bones in proportion to wild plants

Distinctive (New) traits of Infiernillo
1 Pebble smoother
1 Flat chi Pebble chopper
2

General traits that continue
2 Small disk scraper
1 Thick flat side scraper
2 Flat scraping plane
4 Saw-blade chopper

— 1/2 page for figure

Gravel - Zone J

- thick layer in west ~~trench~~ cave - profile and datum depth show it deeper to south than at mouth of cave and also at higher elevation.

- thin layer in east cave and top at different elevation than west cave (also different than Tm c 247 next door and differs from Tm c 274

- deeper & thicker in south not north
- also ~~very~~ too slightly deeper in center of west than along east or west edge of cave

— There fact all against laid down by arroyo bottom stream

~~All these conclusion just direct to~~ Only conclusion that deposited by intermittent underground stream or 2 stream (east & west chamber) that flowed thru cave and emptied out to mouth.

- where it got it gravel remains a ~~the~~ mystery

This would be a moist period.

—

In top 6 inches of gravel found 12 artifact, 86 bone & in a couple of place patches of ~~refl~~ 22 piece ~~[illegible]~~ identifiable clay. (18 phalanges coca.

— no well defined floor or occupation area - occupation ? not true occupation layer as such - but what do have would seem to indicate a small group for short time - & more hunting than food gather

hunting { infernillo diamond pt
thin side scraper ?
2 small diamond
2 pierced bone awls }

food gath - pebble mauler
2 flat scraping plane
flat pebble chopper
4. thin saw-like chopper

Dish chopper Infernillo pt, pebble mauler, pebble chopper - Infernillo diagnostics flat scraping planes - early but occupation not defined - ... general

1/2 page figure

no ground at rock
– Thin midden very larger – Zone I,
occupation 2 – ~~pollen very present period~~
over most of end cave cave floor
but strata thin – 150 cubic feet – features [illegible]
Maize – hand things, seasonal (squash)
pollen indicates wet climate

~~Infundibulum Ulmagra~~
~~atlatl foreshaft~~
221 – bones (2 deer, 1 skunk)
flake side scraper
large drill
conical wedge, pierced awl

185 wild plants, 6 wild seeds, wild runner beans
humped flat scraping plane
~~scraper~~ ~~pebble~~ chopper, pebble
sled chopper, digging stick

pepper (wild)
pepo (1 rind)

much more hunting than food –
[illegible] in feces – wild stuff, pepper – 2 frags of meat tissue
– lack more fruit

gouge – function

2 hand bird yarn (2 or 4 cord rope) – some S but more 2 [illegible] (yarn, 3 cord rope)
square knot + lark's head
Fuegian bag
[illegible] mat (or 1/2)
[illegible] basket
small beads

…ey

H, occupation 3

2 to 4 inches thick

yellow ash over floor - just pebbles, perhaps
gray away by people of occupation 8,
8200 years ago - wet climate
estimate 60 cubic feet · some burning, but no features
micro-band for at least a season.

149 bones (1 deer, 1 skunk, 1 bison?)
rab. sc. small desert
animals pt.

620 ~~lost or no way processed~~ hammerstone
flake chopper
saw-like chop
digging stick worn end of stick tapered

[illegible]
[illegible]

feces mainly wild plant ~~95~~ 71 wild plant - 30 fruit, legu…

overhand + square knot of yucca
S-twist yarn - 2 cord
2 twist - 2 "

1/1 mat (2 frag
long brown basket
quantity cordage

— Frey

Zone G - occupation 4 - level 5 - very [illegible] [illegible] [illegible]
from Zea. 8 -

50 square feet - very [illegible]

<u>Almolo - Tortugas</u>

32 bones

small [illegible] [illegible]

483 plants, runner beans (16 pods), 11 small [illegible]
<u>[illegible] & flat scraping plane</u>
saw-like chopper

23 pepper seeds
13 [illegible] seeds
yellow seed bean
long red brown "
~~[illegible] of [illegible] [illegible] seed~~, [illegible], animal tissue
[illegible]; 5 cucurbita fruit, pod (wild?) animal bone 3
[illegible] & [illegible] 5 [illegible] 2 [illegible] — [illegible] [illegible] & [illegible] 2 [illegible].
[illegible] of [illegible] & [illegible] [illegible] [illegible] on [illegible]

V, small

Zone F - gravel [illegible] - level 4

Zone E - very [illegible] 3 - extensive ~100 [illegible] [illegible] [illegible] - [illegible] 5

C 14 5,650 - 2 [illegible] pits

[illegible]

~~Abandon pit~~

[illegible]

[illegible] scrapers

~~[illegible]~~ small dark

[illegible] wedge

146 [illegible]

805 [illegible] (10 foot [illegible]) [illegible]

~~[illegible] / [illegible]~~

~~[illegible]~~

dark chopper

[illegible] - [illegible] chopper

1 pepper

1 [illegible]

[illegible] ~~[illegible]~~ 2?, bean seed, bean pod, [illegible] [illegible], wild plant pod.

pepper - [illegible]

~~[illegible]~~

[illegible], [illegible], 2 [illegible] , hard S [illegible] good [illegible], Z + S [illegible] soft yarn.

[illegible] [illegible] [illegible]

[illegible] [illegible] [illegible]

[illegible] [illegible] ~~[illegible]~~

2/3

1/3 [illegible] 1/2 strip, [illegible] 1/2 [illegible] 3 1/2 strips, 3/4 [illegible] 1/2 strip, [illegible] [illegible]

[illegible] shell [illegible].

Zone B1 - in back ~~[illegible]~~ cave . dust separating B from A

— Fig.

Zone A — Front to back

all over cave just covered by dust - veg.
some mixture from earlier levs.
~~[illegible]~~ over 600 [illegible]

3 fire pit
1 grass lined pit
burial pit

numerous grass areas & couple of [illegible]

more - band for more than one season - spring & summer

[illegible], Nog Tort, [illegible] - [illegible]
Catan & [illegible] San Lorenzo, Jaumave, Fresno, [illegible]
San Antonio - bow, [illegible]

— end scraper, [illegible] side scraper, [illegible] serrated scraper
~~[illegible]~~ scraper handle

246 bones.
deer.
peccary
rats
birds

clay pestle

9,361 [illegible] [illegible] flat & [illegible] scraping plane
1 [illegible] chopper

lots of corn
2 beans
gourd.
peppers.
[illegible]
cigarettes & pipes, elbow pipe
[illegible] - cotton, cig.

melate & reed [illegible]

- feces - 50-50
shell spoon
[illegible] wedge, scraper handle - bone awl, antler flaker, ulna punch
[illegible]
jaguar skin belt
shoe
[illegible]
[illegible].
bag.

pipe
[illegible] [illegible] - La Perdida - Ojo del Nacimiento - [illegible] B/[illegible]

split stitch [illegible]
twilled matt square corner - square checker
simple loop nets, doubled plain weave, plain weave
burial flute [illegible]

Zone D – white [illegible]
Zone C – [illegible] [illegible] – [illegible] 6
25 cubic feet – [illegible] pit
3945

1 [illegible] [illegible]
3 [illegible] [illegible]
[illegible]
[illegible]

[illegible] 1 [illegible] – 1 deer.

3,100 [illegible], wild squash, wild bean, [illegible]
[illegible], amaranth
[illegible] scraper
[illegible] chopper

bean (yellow red/brown) – chisel scrape or mano
[illegible]
squash –
corn. –

4 [illegible]. corn / bean – (wild) / corn cob | bean | [illegible] / bean / corn [illegible] / pepper | bean

split – [illegible] antler pieces
[illegible] [illegible] – example of [illegible]
[illegible] square front

solid foundation [illegible] – [illegible] not
[illegible] walls
baskets – [illegible] with 3 [illegible]

Zone A - Acc. 8 - ...

128 Beans

...
small dark
small ...
...
elongated ...
Fresnos - Mesa - arrow frag.
Palm, Cole, ..., ...
Tort, ..., ..., ...
language of ...

1360 - ... bean

... - like ...
... of ... plane
pebble ...
clay & stone ...

red brown beans
pepper
corn
... , ...

...

long ... stick
... wedge & conical wedge - ...
from long.
celt
5 ... - 2 ... , ...
... & ... square
... of San Antonio Red ... Palm ...
... cotton - 2/2 ... , ...
... ...
flute
... - ...
shell ...

Zone B Gray ash much occasion very loose - much early stuff brought up
occupation 7

features

900 cubic feet

seasonal maize - [illegible]

direction bone needle + awl
strong [illegible] scraper handle
  worked + split [illegible]
  [illegible] scraper
  elongate scraper
  small disk
  concave [illegible]
  — [illegible]
  drill, small disk, knife
  ——
  [illegible]
  arrow [illegible], bow [illegible]
  spring trap

1143 bowls

buffalo
deer
gopher
possum
mouse
[illegible]

Palmetto
[illegible]
Cedar, [illegible]
[illegible]
[illegible]
[illegible]
Turf
[illegible]
[illegible]
[illegible]

2000 veg., [illegible]
  [illegible]
  scraper - grain
  large disk + pebble chopper
  saw - like chopper

[illegible]
[illegible]
[illegible] - feces?
pepper
2 variety of beans

corn

cotton seed

veg.

shell + [illegible]

antler flakes.
celts

Only 59 [illegible]
  [illegible] Corr.
S. 2. [illegible]
S. 1. Brown
" Black
(1 [illegible] + 1 [illegible])

S [illegible] / [illegible]
overhead, square, [illegible]
[illegible], [illegible] / 1 1/7
4 split stitch bowls + jars

shell tools
bone [illegible]

~~simple coat bag~~
4
57
8
51
52
Texaco 20
Gorry 21
18
19
Spokeshave 22
spring trap 23
[illegible] 24
~~[illegible]~~
Morgols chisel 25
50
47
60
22
~~2~~23
22
66
48
67
~~23~~ 63
62
31
34
35
37
36
27
20
11
25
~~12~~ 28
29
30
67
40
41
42
43
44
68
53

15 – 1 – G
16 – 3 – G
17 – [illegible] F

18 good
18 bad
[illegible]

special knives 76
69
39
Caton 77
Matamoros 78 109
smelter 78
paint stone 79
simple coat bag 80
21
65
64
scoop loop 81
scoop loop + bowl bag 82
simple loop - rollers bag 83
1/2 1/2 square - overlap 84
1/2 with 1/2 3 square corner [illegible] 85
1/2 with 1/2 ~~[illegible]~~ square corner 86
2/2 with 2/2 edge round corner 87
slip knot soft [illegible] 88
overhand knot of soft string 89
front end of mainshaft 90
distal end of mainshaft 91
rabbit stick 92
early long pointed shaft 93
[illegible] foreshaft 94
[illegible] bent 95
Palmillas 96
Strap for [illegible] 97
pierced mattock 98
[illegible] 99
[illegible] bundle pen, 100
" " " [illegible] 101
" " " [illegible] 102
" " " [illegible] 103
[illegible] 104
very few places, [illegible]
2-4 20
2-6 2
2-6 3
106
5-3 2
5-4 2
107
258 – [illegible]

Item	No.	Counts
Infiernillo diamond Pt	(1)	1 1 1 1 1 4
Pebble mace(?) wrap twine(?) ... Pat	(2)	1 1 ?
... , not much right angle edge	(3)	1 2 1? 1 3-2-1-1 ? ?
dragging stick(?)	(4)	
tapered blunt end stick(?)	(5)	1 1 1 1 ? ?
	(6)	
Flake chopper	(7)	
Large disk chopper	(12)	1 1 2
Almagre stem	(8)	1 3 4
Turquoise bag(?)	(9)	(3) → 3 ?
Pebble chopper	(13)	4 2 6
... fiber - 2 hand yarn	15	1 1 ? ?
... fiber 2 hand yarn - 2 cord	16	1 1-5 4
... fiber 2 hand yarn - 2 cord, 2 ... (rope)	17	
Flat chun(?) Pebble chopper	(14)	1 1 4 2
... from ...	(10)	1 1 ?
... scraping plane	18	1 6 1 7 15
Scraper graver	19	1 1 2 3
... attached fore-haft ... not ... ½ ... "	20 24 31	1 2 1 ? ? 1 1 2-2
... fiber 3 ... hand yarn - 2 cord	21	3 2 5
... perforated	32	
... bone awl	33	2 2 ?
... bone awl ... hole	23	12 1-2 ? ? ?
... snail shell	22	
Gouge	25	3 3 ? ?
... Pt	(26)	1 1 1 3
square 8	34	11 1-1 ? ?
... hand ... string	35	2 2-2 ? ? ?
square knot yucca	36	
square knot - hand string	37	
overhand knot yucca	38	5 5 6.5 1-2 ? ?
^ ~~...~~ hand string	39	
flat ended mainshaft	(27)	1 1
possible cane mainshaft	(11)	1 1
small disk scraper	30	2 1 3
Thick flat side scraper	29	1 1 1 3
Flat scraping plane	(28)	3 2 2 7
... - like chopper ...	40	2 1 3 6
... - like chopper ...	41	1 4 19 11 41
... conical wedge	42	20 2
... discoidal	43	1? 1? ?
... flake ... scraper	44	2 1? 3

Tot 274, 12 (about) — 248 8 — 248 7 — 247, 12 — 248 6 — (Total) 165

22 ... - 133
21 ... - 32
43 ...

120 Pierced dish
121 pipe stem
122 platform pipe
123 clay effigy
124 mold made figurine
125 pear shaped clay bead
46-126 Palmillas
127 whistle
128 San Lorenzo
129 tear drops
130 Palmillas Polish
131 [illegible]
132 Palmillas engraved
133 Palmillas Black

11 12 5 4 3 116

152 weaving on stamp
153 weaving on yucca
154 Mexican knot of grass
155 grass around stick
156 1/2 with spaced square design
157 2/2 warp 2/2 edge, 1/3 base all square
158 2/2 with 2/2, all square
159 2/2 – T shaped
163 square pull celt
164 stone pestle
165 pendant pull celt
166 rect. mano
167 bark beater
109a jaguar skin
168 alligator skin
169 javelin
170 [illegible]
171 long bone flesher
172 tubular bone beads
173 small disk beads
174 pierced turtle shell
101 ~~175~~ – Split stick bowl
102 " " lec "
175 " " " basket
176 bundles, netting
177 packboard
178 simple leaf crescentic set
179 plain weave belt of cotton
180 plain weave cotton
181 1/2 twill of cotton
65
182 2 S twist yarn – 2 cord – rope
66
64
183 – 2 Z twist cords braided
16
17
184 – 2 twist cotton
105
185 hard 2 twist 4 yarn cord
186 yucca loop line
187 woven loop line
188 fiber braided belt on mummy
189 chipped celt
189A corn on stalk
189B strip knot of yucca

69

21
81
90
67a
31
11
25
26 abosub Point
28
29
30
20
38
39
36
37
35
33
22
63
62
42
40
41
43
44
53
67
73
64
59
79
✓170a roman antler flaker
✓162 cylindrical mano
✓161 volcanic metate
✓160 paint muller
✓157 1/1 with all square
36
84
87
88
✓ [illegible]
✓146 [illegible]
89
93
79 Caton
✓109 Matamoros
✓108 clay disk
✓111 Mesa Stem
✓112 obsidian blade
✓113 jefencillo brush
✓114 Mesa Black
✓115 Mesa Brown
✓116 Palomilla Plain
117 Proximal end of manufact ✓ 90
✓118 possible arrow mainshaft
✓119 whole foreshaft blunt
✓156 1/2 with 1/4 border, border 1/3 and 3 square & 1 round
[illegible]
✓141 arrow mainshaft - distal
✓140 arrow mainshaft proximal end
✓134 possible arrow foreshaft
✓133 pointed arrow foreshaft
✓137 cane knife
✓135 [illegible]

21
81
80
67a
31
11
25
26 abosunto Paint
28
29
30
20
38
39
36
37
35
33
22
63
62
42
40
41
43
44
53
67
73
64
59
79
✓170a arrow ... flakes
✓162 cylindrical mano
✓161 volcanic metate
✓160 paint muller
✓157 1/1 ... all square
86
84
87
88
✓147 2 [illegible]
✓145 [illegible]
89
93
79 Caton
✓109 Matamoros
✓110 Clay disk
✓111 Mesa Stem
✓112 obsidian black
✓113 papenillo brush
✓114 Mesa Black
✓115 Mesa Brown
✓116 Palomella Plain
117 Proximal end of mainshaft ✓ 90
✓118 possible arrow mainshaft
✓119 welded foreshaft blank
✓156 2/2 ... 1/3 border, border 1/3 and 3 square & 1 round
✓151 [illegible]
✓150 [illegible]
✓149 [illegible]
✓148 [illegible]
✓145 [illegible]
✓144 [illegible]
✓143 [illegible]
✓142 [illegible]
✓141 arrow mainshaft - distal
✓140 arrow mainshaft proximal end
✓139 possible arrow foreshaft
✓138 point on arrow foreshaft
✓137 cane knife
✓136 cane tube cut 2 ends
✓135 cane tube cut one end
✓134 cig. butts
✓120 Pierced disk
✓121 pipe stem
✓122 platform pipe
✓123 clay effigy
✓124 [illegible]

twilled + 3/3 basket basket 45
3/3 basket 46
gourd container 67a
twilled square basket 47
interlocking loop band 48
loop & knot bag 49
portable altar foreshaft 69

3 lined yarn 66
Soft yarn - 2 cord 65
ornament 64
split wedge 68
small pointed stick 67

antler piece 63

large antler bones 50
deer skin 62
[illegible] 51
[illegible] 52
Elongate scraper 53
[illegible] shaft 54
Slip knot yucca 58
2/2 weave 3/3 sleeve
3/3
3/3 weave 2/2 basket 56
3/3 basket 57
cradle 61

55 basket
27 spool 25
pent 29 - 33
1270

Occupation 1 – Zone 0
artifacts

	1.	4	1/1 matt ... edge (No. 4)
	1	16	...
Early	1	18	... scraping plane
common	1	31	2/2 matt
✓ common	1	26	Abrader Point
✓ common	1	11	possible ...
	1	1	... (No. 1)
	1	44	... flake ...

absent
2 pebble ... – ?
3 ...
5 ... – ?
6 ... ?
7 flake chopper ?
10 ...

5200
1956
3244

	10-(16)	10 (33)	14-64		
Occ	2	3	4	Trait No –	trait
			1	49	...
			1	57	lance shaft
			2	50	...
} ...	1	1	5	51	Tortugas
	4		1	16	old traits in com
		1		18	scraping plane
... 247		1		31	2/2 matt
	1	6	9	26	Abrader
	2	7	5	44	flake ... new traits ...
			1	48	...
new		2		69	possible ...
			2	66	...
	3			65	...
		1		68	...
		1	1	67	...
old			1	17	...
		1		14	pebble chopper
	1			24	...
		1	2	21	...
		1		23	...
		1	1	25	gouge
			1	36	...
			2	35	...
		1	2	27	... yellow
		1	1	29	...
	1	1	2	28	... scraping plane
	1	2	4	40.41	...
		1	1	42	...
		4	7	43	...
				62	...
		1	1	52	...
		2	5	53	...
	1			60	...
	1			63	...

I Introduction

A Location – a general in Mexico

(b) In Tamaulipas

(c) in Ocampo Region – Fl[illegible] Canyon

~~(d) elevation~~

(B) Situation – of cave

(b) elevation

(C) Cave – size

– contour

– excavation

(D) Funding – (a) Romero & Valenzuela

(b) [illegible]

(c) ~~6 to 12~~ date

(d) 6 to 12 men

II Method

(A) Excavation technique

1. survey & staking

2. Digging technique

(a) 2 alternate square [illegible] top

(b) each square by vertical slice of [illegible]

(c) trench

(d) alter. [illegible] square by vertical slice

(e) 3 man team

3. Recording

(a) bagging – ten foot – label – discarding

(b) notes – decay & square descriptive feature & burial

(c) Profile – fill in – photograph

(d) Broad plan & feature – photo

~~(e) [illegible]~~

(B) Analysis – 1 above boxing – corn separations – [illegible]

2. Cataloguing

(a) [illegible] on clean sheets

(b) artifacts numbered & washed, A trains

(c) vegetable – 1 counting & types
2. [illegible] – boxing

(d) burials – [illegible] – photo
note
box

3. ~~Analysis~~ artifact

(a) ~~assigning artifacts to correct~~ delineation of layers & occupations

(b) separation into kind of artifacts & drawing accordingly

(c) ping-pong table layout by group

(d) Typology

(e) completes

~~4. Comparative analysis~~

4. Identifications

(a) squash

(b) beans

(c) corn

(d) bone

(e) shell

(f) wild plant

(g) soils

(h) carbon 14

5. Comparative analysis

(a) other caves

(b) rest of Tamaulipas

(c) Texas points

(d) library

(6.) Writing up & photos & diagrams

III - Stratigraphy

Occupation 16 - Zone A -

~~Occupation 15 - Zone B - Zone B - ... features~~

~~Occupation 14 - Zone C - ...~~

~~Occupation 13 - Zone D - ...~~

~~Occupation 12 - Zone E - charcoal~~

~~Occupation 11 - Zone F - ...~~ 1700

Occupation 10 Zone G1 - ash

Zone G2 - veg & ... - 3400

Occupation 9 - Zone H - ash & charcoal 3600

Occupation 8 - Zone I -

Occupation 7 - Zone J1 - brown ash

Occupation 6 - charcoal ...

Number of specimens
Estimated food particles
Estimated gram weight of food particles
initial grams of a food
Percentage of grams of foods
Proteins per hundred grams of a food a particular food
Total Proteins
Carbohydrates per hundred grams of a particular food
Total Carbohydrates
Fats per 100 grams of a particular food
Total Fats
Calories per 100 grams

C
O
P
Y

MISSOURI BOTANICAL GARDEN

"Shaw's Garden"

2315 Tower Grove Avenue

St. Louis 10, Missouri

Sept. 21, 1955.

Dr. Richard S. MacNeish,
National Museum,
Ottawa, Canada.

Dear Dr. MacNeish:

I have completed what I consider to be a preliminary study of the bean and other legume material from Tamaulipas which you sent to me last April. I say "preliminary" because I would like to retain the material for further, anatomical, examination which could yield information to supplement the gross study which is reported here. Additional information is needed so that your material which consists almost entirely of pods can be compared to prehistoric Southwestern collections. The system of bean classification which I have set up for the Southwestern collections is based primarily upon seeds. However, as presented here, your material is most interesting and should be even more significant when correlated with other plant remains and culture change in sites in which they have been found.

The common bean (Phaseolus vulgaris) remains although not differentiated in the table, can probably be divided into three or four different horticultural varieties. The oldest pods of this species antedate the earliest beans, those of prepottery Tularosa Cave, heretofore reported for the New World. Just why these pods were found in such large numbers is somewhat puzzling as prehistoric sites usually yield little in the way of pods; a situation which no doubt reflects a practice of thrashing beans in the field.

S20E10 L3/F6 — large coil [illegible] mat [illegible] of 2 single-warp twilled plaiting ca. [illegible] x [illegible] mm.
— several very small frags, very poor condition, [illegible] some fringe of unwrapped edge [illegible] cond. [illegible] too poor to determine [illegible]
~~[illegible] frags, very poor condition~~ (13 small frags + large frag) in all.

10E5 L4 — 3/3 twilled plaiting (other box)

Unlabelled — frag. of 2/2 twilled plaiting with 4 fibres for each weft and each warp

51E55 L2 — 1/1 single, dark, hard, very poor condition, fibres of 1.5 [illegible] apparently rather crude.

10E5 L3 — 3/3 twilled plaiting (other box)

CHEMICAL COMPOSITION OF WORLD'S PRINCIPAL LEGUMES

COMPARED TO COMPOSITION OF ANIMAL PRODUCTS AND CEREALS.

Food	Percentages			
	Proteins	Fats	Carbo-hydrates	Calories/lb
1. Chick Pea	20.0	4.5	58.0	1670
2. Soy Bean	34.0	16.8	33.8	1970
3. Common Bean (Navy)	22.5	1.8	59.6	1605
4. Peanut	25.8	38.6	24.4	2560
5. Pea	24.6	1.0	62.0	1655
6. Lima Bean	18.1	1.5	65.9	1625
7. Lentil	25.7	1.0	59.7	1620
8. Eggs	14.8	10.5	0.0	720
9. Beefsteak	18 6	18.5	0.0	1130
10. Porkchop	16.9	30.1	0.0	1580
11. Wheat	12.2	1.7	73.7	1750
12. Rice	8.0	2.0	77.0	1720

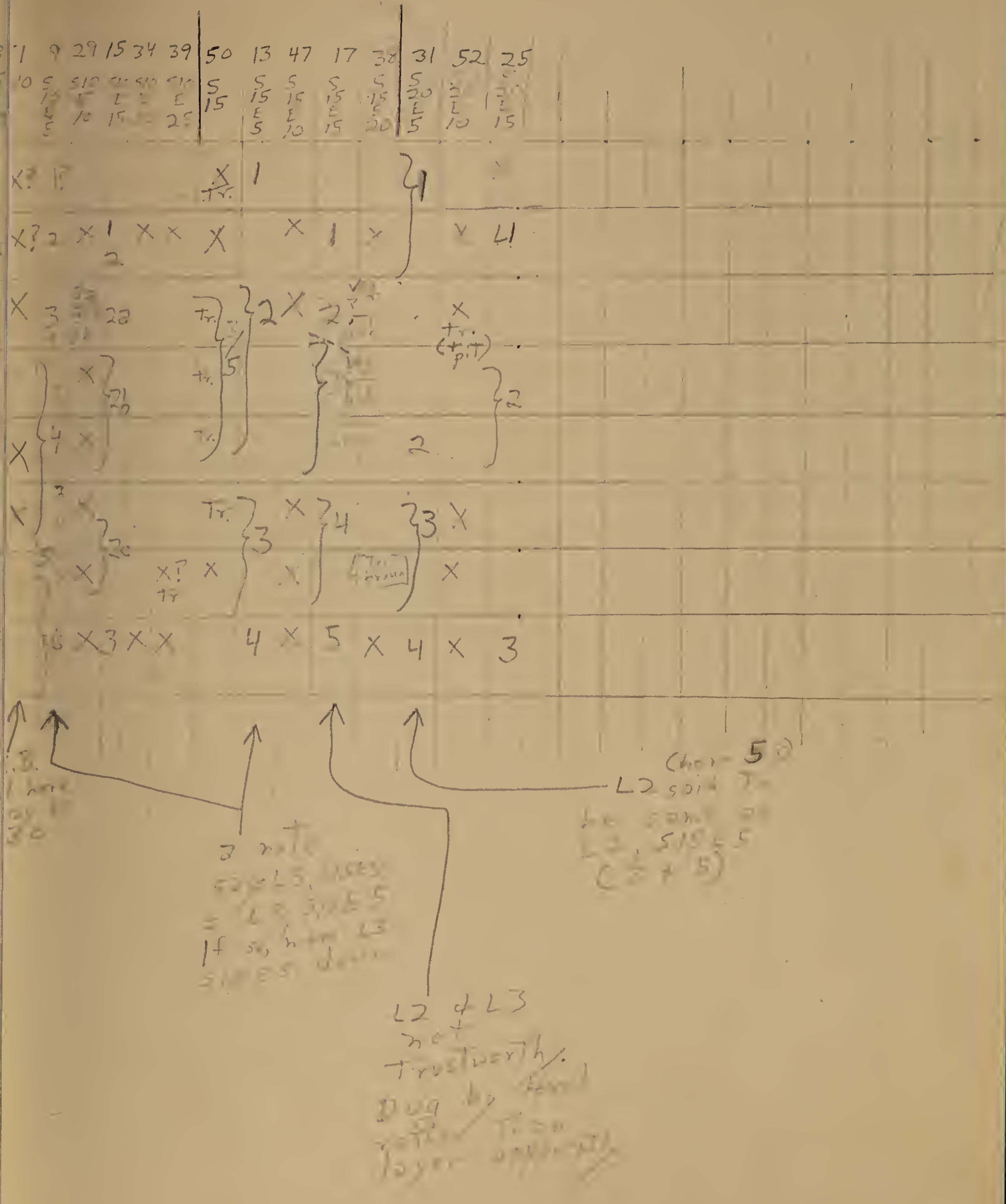
Occ.	Layer	(faint earlier squares)	37 N5	3 N5 E5	23 N5 E10	8 N5 E15	21 N5 E20	14 N5 E25	40 N5 E30	4 E5	24 E10	11 E15	28 E20	163 E25	47 S5 W5	55 S5
8	L1	X X X ?1 ?1 1 1	X	1	1b 1c	1	—			1	1b 1c	1		1		X
7	L2	X X X X X 2 3 4 2 3 4 2 4	X	2	X	2 3 4	2	L1 L2 L3	X	2 3	X	2	X (2b)	?2 X		? 2
6	L3		↑ LA		↓ Tr.				Tr. 5			3?	2b/3 (?)	2b 3		X Tr.
5	L4		LB						Tr. 5				X X	3 X	X	X ?7
4	L5		↓		↑				Tr. 5			?3?	X 4/5	X	X	X 5/?
3	L6				↑				Tr. 5				X 6/7	4 X		Tr.?
2	L7	? Tr. Tr.? ?5 ?5			Tr. (Tr.?)	6/7	?4 7	7?8	2a/6 Tr.	Tr. }4		4	7a	5 X		X
1	L8	— — Tr. Tr. 2 5 3 6 6	X	3	X	5	8	5 tr.	X		X	5	Tr.			X X

5 (gravel below …layers)

Bagged with E25 where L3 + L4 are also given!

L3-5-7 includes corn leaves!
L6/7 has corn seeds

Corncob in L4
Pottery in L3
suggests intrusion or improper assignment of layers.


1 9 29 15 34 39 50 13 47 17 38 31 52 25
(here 5?)
L2 said to be same as L2, 515 E5 (½ x 5)
If so, then L3
L2 & L3 not trustworthy.
Dug by level rather than layer apparently

Occ.
8 L
7 L
6 L
5 L
4 L
3 L
2 L
1 L

1 Brownsville - Concave edge

(1) ~~Brownsville Triangular~~ — Fresnos (?) and straight sw corners

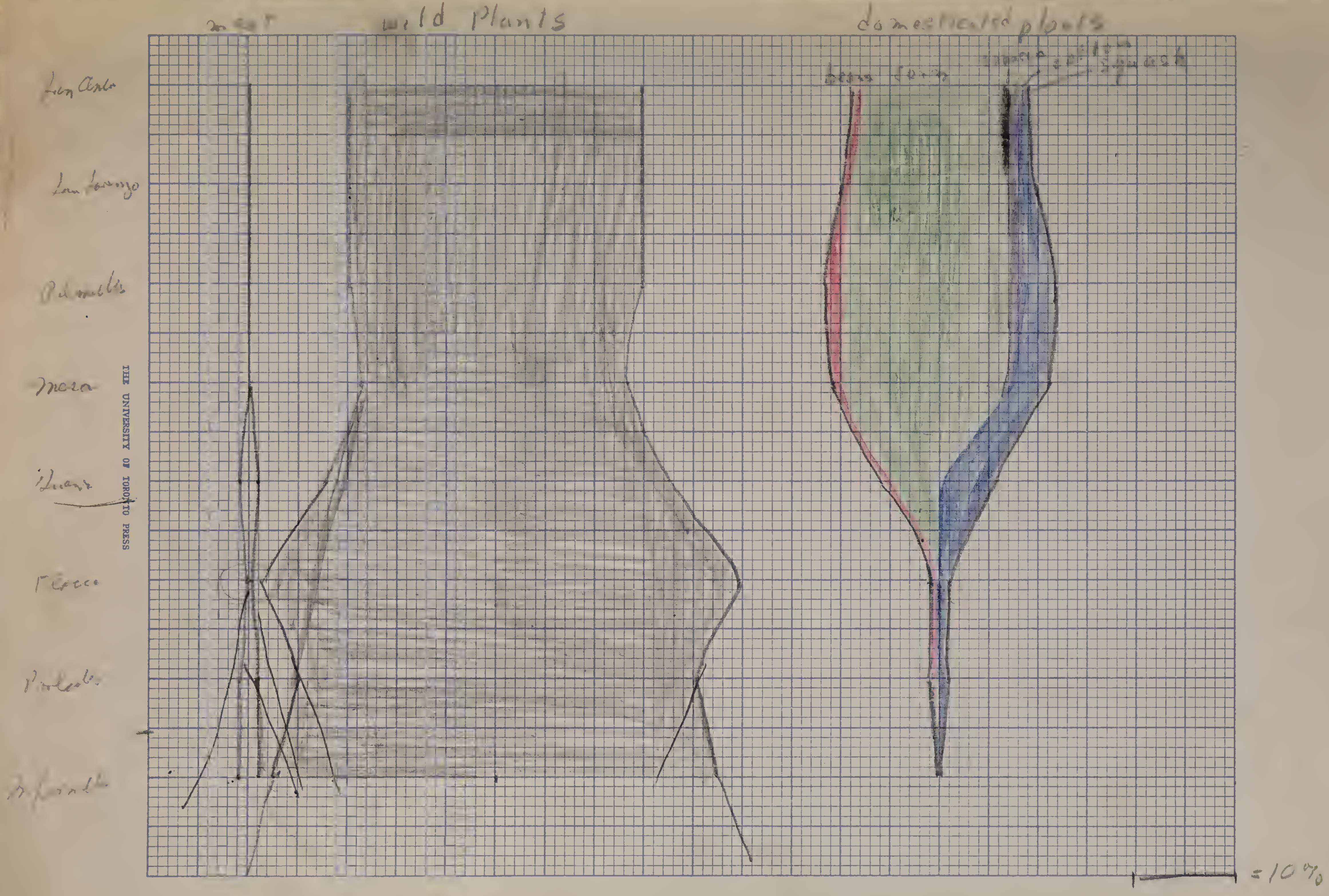
1(A) on Texas Coast and in Red River of Texas but rare in central Texas. However should be all lumped together.

2) Matamoros Triangular — in Falcon in 40 terrace but not high terrace (65 ft) not in Central Texas

3) Los Angeles Concave — ~~Stone Points~~ ?
— looks Talco but is not that type because it separate spatially — only in N.E. Texas in Titus Focus (diagnostic)

4) Catan Round Base — on 40 ft terrace at Falcon

6 San Antonio Single Notch Side
5) Abasolo Triangular
8 Pueblo Stemmed
} not analogies


meat
wild Plants
domesticated plants
beans
corn
squash
=10%
THE UNIVERSITY OF TORONTO PRESS

A.P. Okladnikov

① Lenskie Drevnosti
1944-1952
3 vols.
vols 1+3 in Peabody

② Yalcutiia. 1950.
Peabody

Pre-Maize

Dr G.H.S. Bushnell
Museum of Archaeology & Ethnology
Cambridge University
Cambridge.

Paul Mangelsdorf [?]
Yale U.

Harmond Craig
Aeropts Instit.
Carbon 12 + 13 determinations

Mended Gourd?

Level 3, 1: N10E10 L3.

1200 – 1500

~~700~~ – ~~1000~~
100

300 – 700 } Palmill [illegible]

Early 200 B.C. – 300 A.D. } 96–8

Ornate? 700 – 200 700 B.c. – La Venta

Temple 1500 – 700 } El M. Zac Mi. Tallalu?

Village? 2000 – 1500 – Lower Tres ?

Pebble [illegible]
hemispher [illegible] scraping plane
Flat scraping plane
Elongate end scraper
large flat side scrap.
thin flake " "
gouge
scraper graver.
small [illegible]
[illegible] medium " – O.
[illegible] chop. I
[illegible] scraper with graver pt S.L.
Tri. end scraper, S.L
lamellar flake. P
[illegible] – F
[illegible] SL
[illegible] SL

some { bifacial chopper [illegible] I
" " [illegible] I
Large bifacial [illegible] – I
Flat [illegible] pebble I O
Pebble chopper [illegible] I-O
Flake chopper
Knife blade F
Drill S. L.
bifacial small [illegible] P
[illegible] flint – SA
Chipped celt P
[illegible] S.L.

20 = 1 foot

10 = ½ foot

7.

	Surf.	1?	L3	L3/4	L5	L6-7-8	Total	Surf.	L1	L2	L3	L4	L5	L6	L7	L8	Total
...al disk	2	2 ch. to 3		1		1	(7)	2		2-1+2 / 3		1			+1 from p.4	o.K.	(7)
...t-surf. thin pebble	2	2				2	(7)	2		2					2	1	o.K.
...b. chop.	1 ch. to 3	2 ch. to 3		(2)	1	2 5 ch. to 4 1	(16)	(2	1)	3+1 4		2+1	1	1	4-1 +1 (4)	+1	(17)
small bifac. disk	ch. to 4	ch. to 5					(9)	2	1	(2 2)							(7) + ? o.K.
Keeled scrap. plane	4	12		6	2. 5	3	(32) hum. Kee.	4	1 (+2)	12 1	(1	5)	2	5 2	3 3		(32) (39) (7) +2 = 41
flat scrap. plane	3	14		2	1	2 1	23	(2	1)	14	(1	1)	1		2	2 -1	(24)
elong. end scraper	4	6	1?	1			(12)	(2	2)	(6)	1?	+1					(11)
large flat side scraper	5	ch. to 17		6 ch. to 7	1	1	(32)	(4	1)	(16	1	5)		1		1	[illegible]
Thin flake side scra. (obsid)	4 ch. to 8	5	1			1	(14)	1 (4)	(+1) 1	2 +1	/ 4 1	+1 1			+1 /		(14) o.K.
Tear drop		1		1?	1?	1? 4											
small discoidals 3				1	1 1	2	(8)	4		1	1		1	1		2	10 o.K. (10)
sma. disc.				1	1	1	(3)		(1)	(1)	1		1				
Keeled + domed 1						1	2										
small core 1					1		2	(1)	1							1	
steep scra. 1							1							1			
... disk							1	1									

Cut bone, not clearly artifacts					Snail-shell beads	
Fix			1			
S5 L2	AL2		4		1	
[illegible]E15 L2c	AL2				1	
S[illegible]E5 L1	AL1		5			
[illegible]E20 L2	AL2		5		2	
S[illegible]W30 L1	AL WCh.					
S0E5 L3	AL3		5			
Unlabelled		1	7	(+ animal hair)	6	- 1 mussel or clam shell
S[illegible] E5 L4a	AL4(?)				1	*
N0E25 L4	AL2		5	(? beetle grasshoppers)		
S[illegible]E15 L2a	AL3			(very curious 'bug')		1 mussel shell
[illegible]5 L4	AL4		3			
S5E15 L1	AL2		1			
[illegible]E20 L1	AL1					
S10E5 L6a	AL7					
S0E5 L5	AL6		3		1	
[illegible]E25 L5	AL7		2			
S5E5 L1	AL1		4			
N10E5 L[illegible]	AL2		3			
[illegible]10E20 L5	AL(7?)		3		1	
S5W30 L2	ALWCh.				9	
[illegible]10E15 L2a	AL2		3	(animal hair)	1	mussel shell
[illegible]E25 L4	AL6		9		1	
S5E10/S10 E10 L8	AL8(!)		1	(snail shells also, from gravel)		
[illegible]15E15 L2	AL3		2			
N5E30 L2	AL2		5		1	
[illegible]E2[illegible] L4/5	AL5				* 1	
N10E10 L5	AL8		3		1	
N5 L2	AL2				1	
E20 L2/3	AL2		1			
S0E1[illegible]/S5E10 L4/6	AL4		2			
S15W2[illegible] L2a	ALWCh.		1			

Cut bone, ext - early artifacts   Snails/shells

E10	L??	AL?			1
E10	L2b?	AL2	6		
15E25	L3	AL2	1		
S5E25	L1b	AL2	2		
5	L4	AL7	2		2
5E10 + E10	L2	AL2	4	(animal hair - like - feather [illegible])	6
5E10	Gray + Brown layers	AL3	1		1. "
25	L2a	AL2	4		
5E15	L3	AL2			
10E25	L5	AL7	5		
15E30	L2	AL2	7		
5E25	L3	AL2	2		3
15E10	L1b	AL1			
10E5	L6	AL7	1		
5E20	L2	AL2	7	(feather)	3
20	L7a	AL6	1		
S10W25	L4	AL WCh.			4 mussel
N10E25	L3	AL2	5	insect - beetle?	4
S10E20	L2	AL2	3	(1 Tool removed)	1
20E15	L2	AL2	6		
S10W25	L3	ALWCh.	1		1
S5E15	L2	AL2	4		

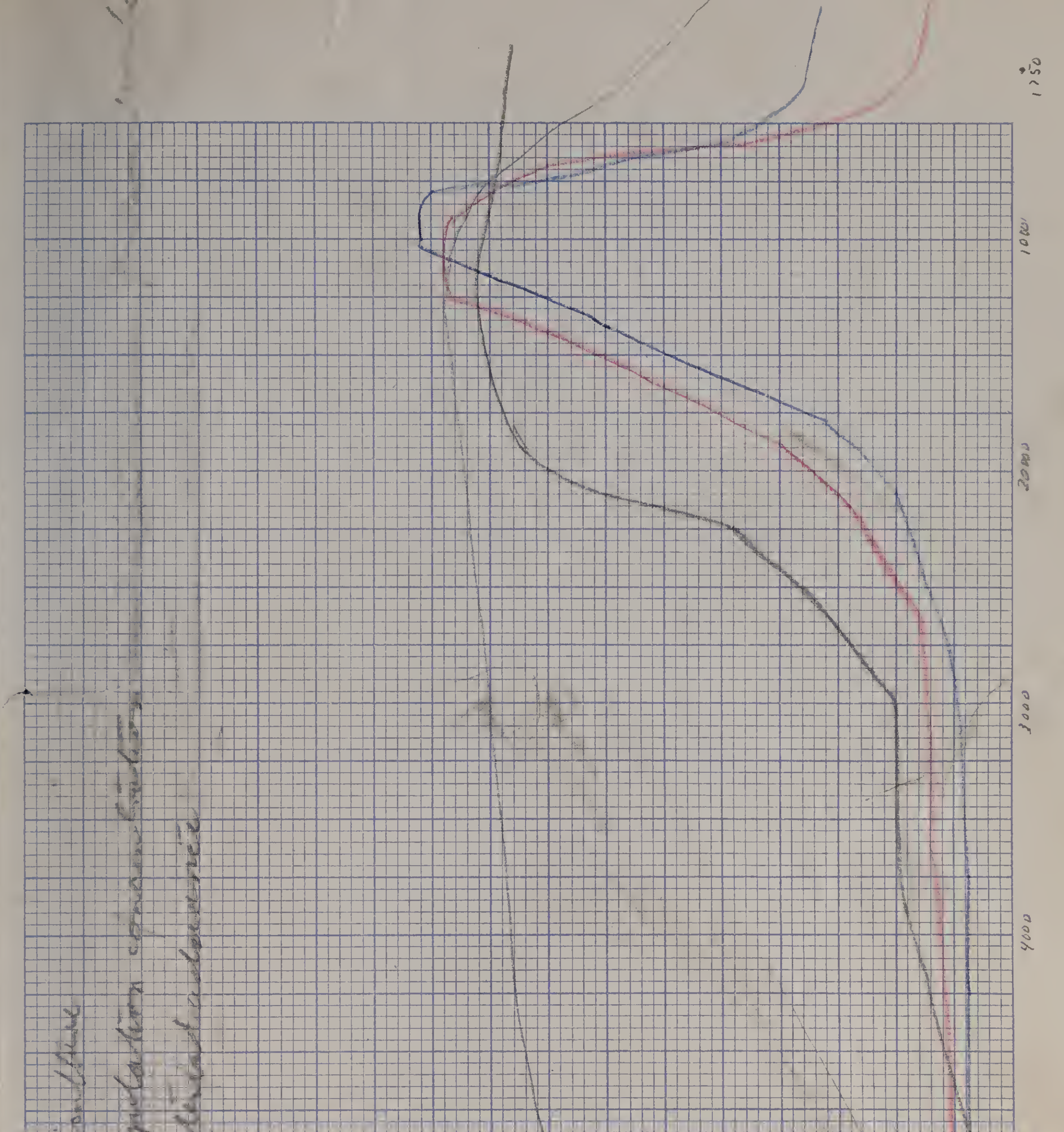
Cut bone, not clearly artifacts					Snail-shell bea[ds]
Box 3					
N15E20/N20E20	L2	AL2	16		1 oyster (?) shell
~~5~~	~~L4~~	~~AL7~~			
N5E20/E20	L2	AL2	4		6
20W35	L1	ALW Ch	1	Beetle (?)	
N5E25	L2	AL2	7		
S5E20	L2	AL2	2		
S5E5	L6,7,8	AL6	3		2
N5E30	L3b	AL3	2		
S20E15	L1	AL2	2		
S5W30	L3	ALW Ch.	1		
S5E15	L1	AL1	1		
S5E15	L3	AL 7	1		
~~S5~~	~~L1/3~~	~~AL1~~			
~~N5E15~~					
S20E15	L2	AL4	1		

Cut bone, not clearly artifacts					Snail-shell beads	
Box 4						
N5E5	L2	AL2	#1	(feather)	1	
S5E10/S10E10	L2	AL2	5		2	(1 removed).
N10E10	L3	AL2	3	(feather, hair)		
N5E25	L1	AL2	2			(mussel)
E15	L3	AL3 (?)	4	(human? - prob. not) (+ an L7 human pelvis)		
N10E10	L2	AL1	1	(human?)		
E5	L3	AL2	1		3	
E5	L2/3	AL2				
N5E15	L4	AL2	1		2	
N15E10	L1	AL1	1			
S10E10	L7	AL7	2			
N5E10/E10	L1a	AL1	1			
S20E10	L2	AL2	1			
Box 5						
S5E5	L2	AL5	3		sea-shell?	
S10	L3	AL3				
S5E5	L5	AL5	1		1	
S15E10	L7	AL7	1			
S15E10	L3	AL3	2			
S10E15/S20E5	L1	AL1+2	1			
N10E20	L6	AL8	1			
S10E10	L3	AL3	1			
N5E30	L3a	AL3	1			
N10E5	L1	AL1			1	(mussel)
S5E15	L1	AL2	2	(feather)	2	
S10E5	L2	AL2	1	(1 artifact removed)		
E15	L2	AL2			1	(mussel)
S5 [Box 6]	L2c	AL2	1		1	
S15E10	L2	AL2	5			

Cut bone, not clearly artifacts — Snail-shell beads

Box 6

				Snail-shell beads
N?E25	L2	AL2	3	(mussel)
?10	L4c/d	AL4		1
?5E25	L1a	AL2	1	
?10	L4a/b	AL4		1
?10E20	L3	AL3	1	
?E15	L5	AL8(!)		1



THE UNIVERSITY OF TORONTO PRESS

Feb - 23 - Monday

Read Hill Chap. II

Fibers — twisting plant fibers to make cord - Mongoloids ways is major invention
- cord
- weaving
- paper

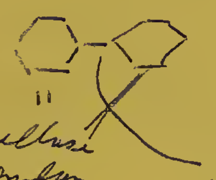
Fibers - principle constituent - cellulose = complex carbohydrate ($C_6H_{10}O_5$)

- closely related - glucose — $C_6H_{12}O_6$
- cellulose is a condensed molecule.

molecular weight is 162 = n

wood = 2500 units

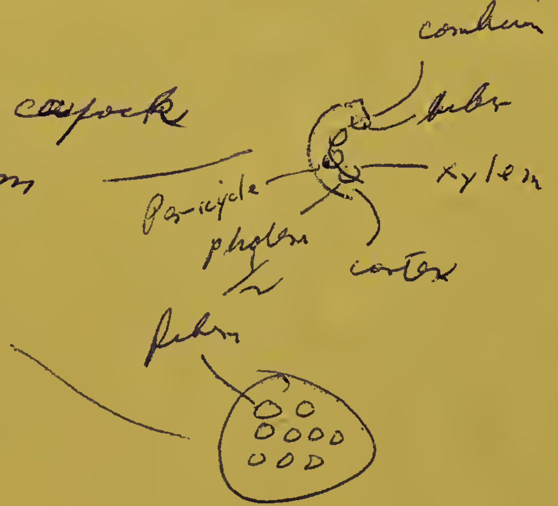
cotton = 3000-5000 units



Glucose
↓
cellulose
↓
chains
|
micelles
|
microfibrils
|
fibers

Plant structure fibers

1. surface fiber - such as cotton & kapok
2. soft bast fiber of dicot stem
3. hard fibers monocot stem
4. woody trees



Fibers no good unless have convolusions [interlocks each other] so can be spun

Fibers no good unless thread ~~fr~~ has strength

Fibers

Bark cloth - fiber of inner bark mechanically interlaced

1. Tapa - Brussonetia Papyritera Moracea
   different piece of bark beaten together
   - appears in S. A. and Otomi
   Silk indirectly comes from Moracea (Mulberry)
   old world.

2 F~~lax~~ - Linum usitatissmum Linaceae
   - one of oldest plants - in bible & pyramids of Egypt
   - in Israel had ceremonial significance
   - annual herb with blue-white flowers
   - dual purpose - 1. oil (linseed oil
     2. fiber
     3. straw for cigarette papers

   Old World

3. Hemp - Cannabis Sativa - Moracea
   - fiber in pericycle - coarse & strong
   - like flax fiber is extracted by wetting or rotting
   Old World

3. Jute - Cochorus sp Tiliaceae
   - very long fibers (6 to 9 feet)
   - very weak & rot easily
   - used as burlap - gunny is name in India
   therefore is gunny sack

4. Henequen (Sisal) Agavae Amaryllidaceae
   - from leaves - very strong & coarse

[left margin: "Succt ... stem fiber"; "...cut ..."]

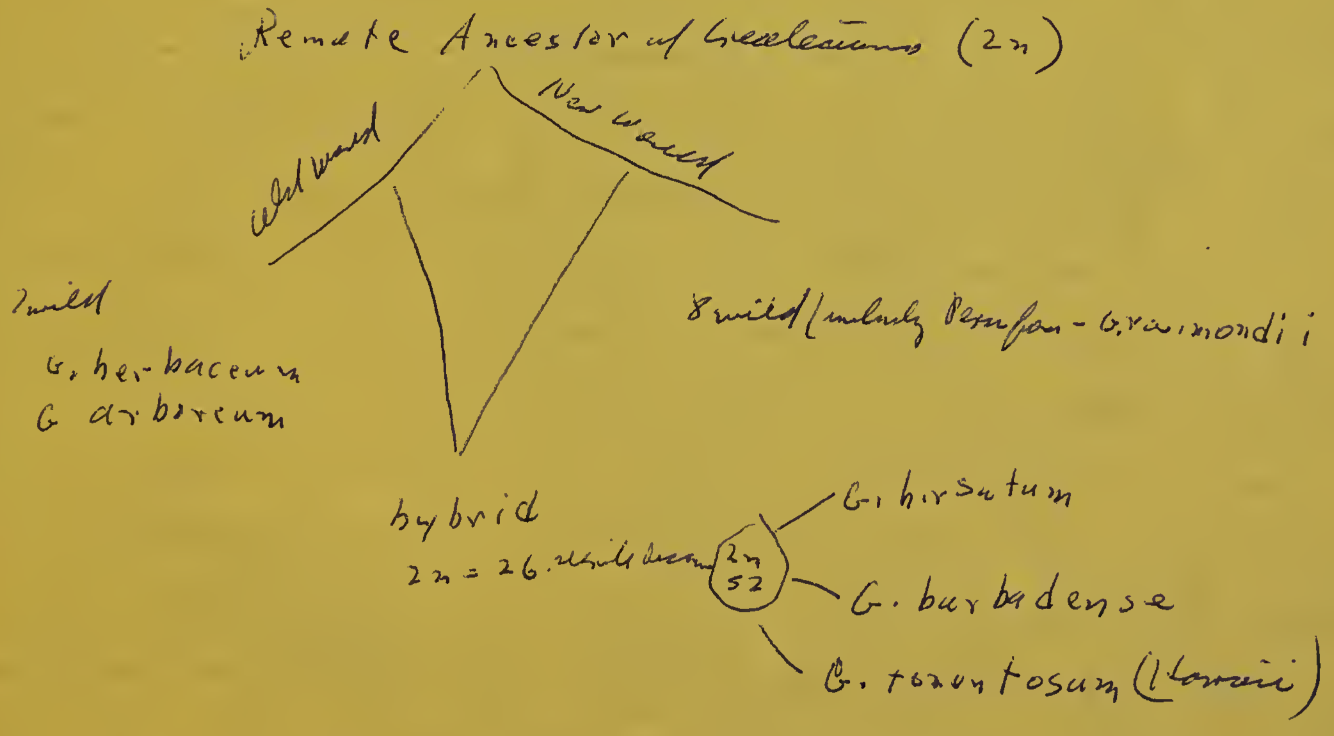
5 Manila Hemp – Musa textilis – Musaceae
- from Phillipines
- used for marine cord

6 Cotton – Gossypium spp – Malvaceae
- confusion as to number of species.
- Hutchinson, Sylor & Stevens
"Evolution of Gossypium

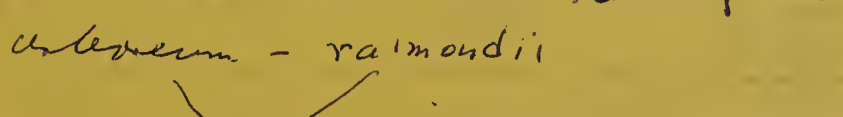
theory of Hutchinson
1. 20 species ——— (a) 16 wild - no lint
(b) 4 cultivated - have fuzz lint.
2. World wide spread
3 - 4 cultivated species.

3 chromosomes – Old World. (a) G. herbaceum – India to Egypt
G. arboreum – India, China & S.E Asia
6 chromosomes New World (b). G. barbadensi – South America
G hirsutum – Central America

New World are hybrids - allopolyploid - hybrid that maintains all chromosomes of both parents



Stevens etc would have cross taken place recently



[illegible]

Mangelsdorf says nonsense as G. tomentosum is wild, never was cultivated and secondly the other two hirsutum & barb are often sterile showing long period of hybridization

Occ 5

[illegible]	248/2	248/7	248/32	248/33	248/40	248/41	248/46	248/57?	248/98?	248/105?	248/110?	248/140	248/16	248/17	248/27	248/76	248/89	248/104	248/144	248/151
	✓	✓		✓			✓					✓	✓	✓	✓	✓	✓	✓	✓	✓
(28)																		2		
1																				
2	1		2	1					3	5	12						///			
3	3	1							2?	4?	5?		2				17	5		
4	2																			
5		2					1		3?	1								1	1	
6		1																		
7											6?						4			
8			1				3	1	40		6?		3	2			533	23		
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54											3?									
56									1?											
*9																		1		
[illegible]			1								1?						3			
[illegible] hull																				
[illegible]																		7		
[illegible] seed																		4		
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[illegible]		5																		
[illegible]																	✓			
[illegible]							1		[illegible]	16?	1?			1	3		1	10		
S[illegible]	8													✓			✓			

PLANT POISONS

ORDEAL POISONS:

Physostigma venenosum (Leguminosae) "calabar bean" (Africa)

CONTACT POISONS:

Rhus Toxicodendron (Anacardiaceae) "poison ivy" (N.Am.)
Rhus Vernix (Anacardiaceae) "sumac"

FISH POISONS:

Derris elliptica (Leguminosae) "tuba" (Asia)
Lonchocarpus spp. (Leguminosae) "timbo", "barbasco"(S.Am.)
Tephrosia toxicaria (Leguminosae) "barbasco" (S.Am.)
Tephrosia virginiana (Leguminosae) "devil's show-string"(N.Am.)
Tephrosia Vogelii (Leguminosae) (Africa)
Erythropheleum guineense (Leguminosae) (Africa)
Phyllanthus spp. (Euphorbiaceae) "barbasco" (S.Am.)
Clibadium asperum (Compositae) "barbasco" (S.Am.)

ARROW POISONS:

Antiaris toxifera (Moraceae) "upas tree" (Asia)
Strophanthus hispidus (Apocynaceae) (Africa)
Strychnos toxifera (Loganiaceae) (Asia)
Strychnos spp. (at least 45 spp. used) (Loganiaceae) "curare" (S. Am.)
Chondodendron tomentosum (Menispermaceae) "curare" (S.Am.)
Sciadotenia spp. (Menispermaceae) "curare" (S. Am.)
Anomospermum Schomburgkii (Menispermaceae) "curare" (S. Am.)
Abuta grandiflora (Menispermaceae) "curare" (S. Am.)

INSECTICIDES:

Derris elliptica (see above)
Lonchocarpus spp. (see above)
Chrysanthemum spp. (Compositae) "chrysanthemum" (Asia)
Nicotiana rustica (Solanaceae) "tobacco" (N. Am.)

RODENTICIDE:

Urginea maritima (Liliaceae) "red squill" (Mediterranean)

NEW WORLD NARCOTICS AND STIMULANTS

Excitantia	[Caffeine beverages]
	[Tobacco]
Inebrantia	[Alcohol]
Hypnotica	None
Euphorica	*Erythroxylon Coca (Erythroxylaceae) "coca" (S.Am.)
Phantastica	*Lophophora Williamsii (Cactaceae) "peyote" (Mex., N.Am.)
	*Rivea corymbosa (Convolvulaceae) "ololiuqui" (S. Mex.)
	*Panaeolus, Psilocybe, Stropharia, Conocybe spp. (Agaricaceae) "teonanacatl" (S. Mex.)
	Virola spp. (Myristicaceae) "yakee" (NW. Amazon)
	*Banisteriopsis Caapi and other spp. "caapi", "ayahuasca", "yaje" (W.Amazon); Tetrapterys methystica (Malpighiaceae)
	*Piptadenia peregrina (Leguminosae "yopo", "cohoba" (Orinoco Valley; Antilles)
	Sophora secundiflora (Leguminosae) "red bean" (mex., SW. USA.)
	Olmedioperebea sclerophylla (Moraceae) "rape dos indios" (Braz. Amazon)
	Datura candida, D. sanguinea (Solanaceae) "maikoa" "borrachero" (Andean Col., Ecuad.)
	Datura meteloides (Solanaceae) "toloache" (Mex., SW. USA.)
	Methysticodendron Amesianum (Solanaceae) "culebra borrachero" Colombia.

* Of outstanding interest.

Read: Hill: pp. 277-285.

Consult: Cooper: "Narcotics and stimulants" in Handbook S. Am. Ind., vol. 5, pp. 525-558.

Other helpful sources: Taylor: "Flight from reality"
Hesse: "Narcotics and drug addiction"

[illegible] – [illegible] – first [illegible] of [illegible].
[illegible] – [illegible]
[illegible]

[illegible]
Belladonna? – [illegible] – Central Europe, [illegible]
– [illegible], [illegible], [illegible]

Hyoscyamus? – [illegible] – [illegible] – [illegible]

Datura? – [illegible] – [illegible]
[illegible]

Rauwolfia? – 3000? years [illegible] in India – [illegible]
1931 – [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

Ephedrine? – [illegible] – 5000? years in China
[illegible]
– [illegible]
[illegible]
[illegible]
Ergot – [illegible]
– [illegible]
[illegible]
[illegible]
[illegible]
Colchicine? – [illegible]

[illegible] – [illegible] – [illegible] to Europe – [illegible]
[illegible]
a stimulant

	Drug	name	family	active	Act on
	Opium	Papaver somniferum	Papaveraceae	morphine, codeine	nervous system
Alkaloid	Coca	Erythroxylon coca	Erythroxylaceae	cocaine	"
	Physostigma	Physostigma venenosum	Leguminosae	physostigmine, eserine	" "
	Belladonna	Atropa Belladonna	Solanaceae	hyoscyamine, atropine	" " circulatory
	Hyoscyamus	Hyoscyamus niger	"	" "	" " "
	Stramonium	Datura stramonium	"	" "	" " "
	Rauwolfia	Rauwolfia serpentina	Apocynaceae	reserpine	" " "
	Ephedra	Ephedra sinica	Gnetaceae	ephedrine	circulatory system
	Ergot	Claviceps purpurea	Fungi	ergotamine	" "
	Cinchona	Cinchona spp	Rubiaceae	quinine	malaria
Glycosides	Digitalis	Digitalis purpurea	Scrophulariaceae		circulatory system
	Cascara	Rhamnus purshiana	Rhamnaceae		[illegible]
	Antibiotics	Penicillium spp	Fungi		
		Streptomyces			
		Bacillus spp			

Insecticides

pyrethrum — aerosol bombs

Fish poisons — used in most part of world — stupefies fish. acts on respiratory organs

Rotenone — comes from both Lonchocarpus and Derris.

Arrow poisons — world wide distributions — very complicated to extract poison
— 7 or 8 alkaloids — strychnine most important

sacred
Teonanacatl - mushrooms - Panaeolus
Mr. Gordon Wassins

Virola - snuff (also tobacco & piptadenia)
made from resin from bark

Banisteriopsis and Tetrapterys methystica
- rasp or boil bark
- alkaloid - called harmeline
- a bitter drink

Sophora secundiflora - red bean - effects respiratory tract
- dangerous.

Anadenanthera peregrina - a snuff - little known.

Datura - very dangerous - belladonna family

Methysticodendron -

Reid - Muenscher - Parsons
Plants of U.S. - Ed 2, pp 1-20

Poisonous Plants always been active agency - only differs from medicine in degree

1. Toxin in themselves
2. Those that form toxin once in the body
3. Substance formed by microbes. (not studied here)

Muenscher - classes of poisons
1. Blood poisons
2. Nerve poisons
3. Nerve - muscal
4. Muscular
5. Surface irritants

1. ~~[illegible]~~ Alkaloids
2. Sapin - glucosides
3. Cyanogenic acids (mus
4. [illegible]
5.
6. Toxoloids

Fish poisons - rotenone

Ordeal Poisons - used to determine guilt or innocence of criminals
Physostigma - has 3 alkaloids - act as sedative & loss of muscular control & death by smothering
Erythrophleum - legume
Hemlock - 5 alkaloid - 1 conniine - paralysis motor nerves. - also
Cattle poisons - delphinium, loco weeds (astragalus)
Rat poisons - Urginea

Read Hill 277-285

New World Narcotics

Cocaine - best known - chewing S.A. highlands & upper Amazon
- plant range from lowlands to 10,000 feet
- earliest coca leaves 400 A.D. from mummies

Highland —
1. strip leaves.
2. dry them
3. carry them in special bags
4. stuff leaves in mouth with lime
5. Chewed around & quid stuffed under upper leaves.

lowland —
1. fresh leaves.
2. dry and roast them
3. then ground them and ground through cloth
4. Then mix them with alkalki mixture in ash (from lime or bark.)
5. Then push it around gums

Cocaine is concentrated & must be injected in blood stream.

Coca is a strengthener and no known bad effect except that cocaine may be made from it.

Peyote cactus - used by whole population
cactus rich in alkaloids - most active is mescaline - 8 alkaloids in peyote - used in northern Mexico & formerly in S.W.

Kiowa & Apache brought back with from N. Mexico
- 1937 - Native American Church - 13,000 members
- 1935 - investigated by House of Representatives

Ololiuqui - morning glory - used by witch doctors
- written up by ~~Fr~~ Francisco Hernandez -
Foods & Medicine of Mexico in 1527 -
- Journal of Mental Science, 1956

40 10 93 2 19 2 4 13 1 1 5

236 44 27 165 2 3 21 7 15 1 2 33 18 1 11 19 12 6 4 4 2 2

25 11 106 18 3 5 25 22 1 25 1

9 3

101 25 5 71 19 32 19 1

55 29 31 17 9 8 3 3 6 1

30 3 27 17 8 2

100 33 33 25

15 3 12 4 4 3 1

742 .5 53 524 9 10 109 28 30 4 12 15 29 6 28 49 15 8 10 7 8

[Various charts, notes and graphs]